Status of the Trumpeter Swan on the Kenai National Moose Range

by

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The Kenai National Moose Range, 112 miles by road but only 20 air-miles from Anchorage provides within its 2,700 square mile boundary more than 1,800 square miles of Trumpeter swan (Olor buccinator) habitat. Two-thirds of the refuge is lowland, with low ridges, rolling hills and muskeg, much of it timbered with spruce-birch-aspen forest. There are more than 2,800 lakes, 160 miles of rivers and many more miles of smaller streams and drainages. The remaining third of the refuge lies in the Kenai Mountains which rise to their highest point of 6,612 feet.

It is the lowland region lying westward of these mountains to the Cook Inlet shoreline that supports not only Trumpeter swan habitat but major road systems, numerous recreational facilities including commercial fly-in fishing camps, two oil and gas field complexes with their associated road systems, powerline and pipe-line rights-of-way and in addition, supports a favored playground for much of the State's population residing in the greater Anchorage area.

North of the Sterling Highway which generally bisects the Range, more than 1200 lakes dot these lowlands. This lake region and its connecting drainage system supports 80 percent of nesting Trumpeter swan habitat.

Although Trumpeter swan may have been identified on the Kenai during the 1940's, serious investigation and subsequent refuge records date only from 1957 and revealed at that time, 20 nesting swan pair on the Kenai Moose Range.

During the succeeding twenty-two years recorded active nest sites reached their peak of 39 nests in 1965, thereafter steadily lowering in total number to 21 observed sites in 1972, increasing to 28 active sites this season. The annual mean for active Trumpeter swan nest sites on the Kenai is 25.4. Although there has been some variation in observed active nests, it has been difficult to attribute this change to any specific event or happening. A late spring and persistant low average temperatures during 1975 may have contributed to our very low 48.8 percent of cygnets reaching flight stage. This, however, was followed by a high cygnet survival rate of 87 percent in 1976. Our records show average survival rate of cygnets to flight stage on the Moose Range to be about 70 percent.

It has been suggested the Kenai habitat is fairly well saturated and little growth potential remains for this range. Indeed, natural fluctuations and the population has remained relatively static. We do regularly observe new nest site locations every season without recording an increase in nesting pairs. This shifting of nest sites within a local area, assuming the same swan pairs, may be the result of marginal habitat, some unidentified disturbance or other related factors such as unstable water levels.

Since the late 1960's several Trumpeter swan nest sites have relocated due to lowering water tables. In one instance, the nesting pair attempted unsuccessfully for two seasons to produce a

brood from their offshore site because the lowering lake level provided a land bridge accessable to predators. Other observed sites, constructed during early spring runoff gradually became high and dry vegetative mounds without protective surrounding water. Low seasonal precipitation and relatively drought conditions for the Kenai lowlands beginning in 1967 was one contributing factor in the 87,000 acre wildfire on these lands in 1969. Continuing low to below seasonal rainfall may well be associated with the three to four foot water table drop observed on many refuge lakes. Observations of some early spring arrivals have frequently found a pair of birds resting on yet ice covered lakes waiting impatiently for the delayed breakup. Some pairs have seemingly hurriedly elected to construct their nests in a less favorable site at the ice-free lake outlet thereby accepting perhaps a less than secure location.

Assuming beaver (Castor canadensis) create stable water levels, this season only two of the known swan nest locations are supported directly by any of the estimated 250 beaver houses on the refuge. Also this year's nest site locations associated with lake environments ranged in size from 25 to 350 acres. Of the 28 observed nesters, 10 (37 percent) had located their sites on islands, 2 on peninsulas, 8 along shorelines, 3 at creek outlets and 5 on or adjacent creeks.

Refuge records identify swan pairs at certain locations that were continually successful nesters season after season, at other sites,

pairs of swan were consistantly poor nesters. Generally the successful nesters were found in more remote locations less likely to disturbance and with stable water conditions.

By contrast, during an August 1978 aerial survey of 365 square miles of swan habitat west of Cook Inlet and 35 miles west of the City of Kenai, 175 Trumpeter swan were observed. Twenty-three pair of adult swans were sighted with seventy-four cygnets; fourteen pairs were without broods. It was obvious after flying similar swan surveys on the Moose Range that the swan density appeared much higher on the west side. For example, of approximately 2,100 square miles (1,800 sq. mi. on the Moose Range) surveyed on the Kenai Peninsula this season, only 82 adults were observed with 27 nesting pairs. The data suggests that the western Cook Inlet area surveyed may support up to seven times more adults and five times more breeding pairs of Trumpeter swan per square mile than the Kenai Peninsula area. No marked birds were observed during this survey.

Our Kenai observations would suggest at several lake nest site locations not all requirements to raise a brood are available. The sighting of family movements between lakes exposed the group to predators as well as to accident. One local resident reported a land otter (Lutra canadensis) captured every cygnet from the swan brood nesting on his lake. Many lakes on the Moose Range are either very large or have no inlet or outlets and water levels

appear to fluctuate substaintially. Any favorable, if somewhat marginal sites have already been taken by the resident swans and any surplus birds may have relocated on the west side of the Inlet. Although comparable data is lacking, Moose Range lakes are undoubtedly subject to greater use by aircraft, boats, canoes and fishermen than the smaller, more secluded lakes on the western side on the Inlet.

On the Kenai, the Trumpeter swan population can expect to face continued economic expansion and human community growth. Since our survey includes some areas adjacent the refuge, some loss of nesting sites maybe associated with increased economic and human disturbance. Human activity when allowed to intrude creates an obvious deterrent. For example, some nest site locations in the developing industrial North Kenai area appear to have been displaced eastward into the Moose Range. This movement may have forced some nesting paris into limited or marginal habitat conditions although providing perhaps temporary security from human disturbance.

Some years ago a gas pipeline right-of-way was constructed along the Cook Inlet coastline adjacent the refuge. Near its land terminus and direct departure into the Inlet to an offshore gas production platform, a Trumpeter swan pair was displaced when someone decided to cut a road back to the nearby lake for crew recreation. This pair abandoned the site and the following year a pair attempted unsuccessfully to nest in marginal habitat two miles away. This preferred nesting habitat was lost by new development.

Observed human community expansion has also frequently displaced swan pairs from lake to lake within the local area. The sale of a lakeshore residence to a new owner not particularly concerned with the Trumpeter swan nest site nearby, apparently displaced that pair following the owner's operation of an All Terrain Vehicle to the nest location. The following season, we assumed the same pair established a new nest site on an island in an adjacent lake. Continued island visits by canoeing youngsters displaced the pair to yet another lakeshore some distance away. We believe this swan pair has now relocated to eight different locations in their attempt to escape human disturbance and find suitable habitat.

Commercial tent camp operators are not permitted to construct camps at Trumpeter swan nesting lakes, yet there seems to be always one who values the dollar more, only to leave cold eggs in a nest upon his departure.

Wintering swan on the Kenai at Skilak Lake outlet were common until 1966. We believe increased human activity in that immediate area may have incouraged the groups to depart. The current Trumpeter swan population on the Moose Range may well be determined by their insulation from disturbance.

Upcoming changes in land status under the Alaska Native Claims Settlement Act of 1971 will convey certain public lands to private ownership. Portions of the Moose Range will be lost and although all final selections are not known, major portions of favored swan habitat involving as many as one dozen Trumpeter swan

nesting sites may be affected by this future land exchange.

Many of our observations on the Kenai are naturally presumed because of the lack of marked birds. Although the refuge staff has assisted in banding and neck collaring numerous refuge Trumpeter swan, sightings of returning birds has been disappointing. It would appear juvenile birds go elsewhere during their non-breeding years. We have, however, received several positive sightings of Kenai wintering swan near the Skaget River and at Ocean City in Washington State.

Human use of the Kenai National Moose Range is increasing steadily as the population of southcentral Alaska continues to grow. The displacement of swans due to conflicts between human activities and swan is inevitable. It will be our responsibility to continue efforts in protecting the Trumpeter swan population, monitor the status of this population and solicit the public, oil and gas representatives, Native interests and others for their support in the development of safeguards to perpetuate this unique species and protect the outstanding wildlife features of this refuge held in trust for present and future generations.